

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-68 are pending in this case. Claims 1-15, 22-24, 38-46, and 54 were previously withdrawn, as being drawn to non-elected species. Claims 17-21, 29, 34-35, 47-53 and 55 have been withdrawn by the Examiner, according to 37 CFR 1.142(b), as being drawn to a non-elected invention. Claims 16, 25, 32, 33, 37, 56, 58 and 63 have been amended. Claims 64-68 have been added.

Specification

In the specification, a replacement paragraph has been provided, to be substituted for the paragraph beginning on page 50, line 33, thereby correcting the informality objected to by the Examiner, where on page 50, line 37, "150" should be "155".

Drawings

In the drawings, the Examiner has objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because Figure 1b does not include the reference number "107", mentioned in the description on page 23, lines 3-6. A corrected drawing of Figure 1b has been submitted.

In the Drawings:

Subject to the approval of the Examiner, please substitute the enclosed set of formal drawings for the drawings originally filed in the application. Figures 1b has been amended to include the reference number "107" as required by the Examiner.

Claim Objections – Informality

The Examiner has objected to claim 63 because of an informality. Claim 63 has been amended as suggested by the Examiner.

Claim Rejections – 35 USC § 112

Claim 58 has been rejected by the Examiner under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Claim 58 has been amended: reference to a birefringent layer with individually switchable elements has been added to the claim.

Claim Rejections – 35 USC § 102 – Rehorn

The Examiner has rejected claim 16 under U.S.C. 102(b) as being anticipated by Rehorn in U.S. Patent No. 2,631,496.

Claim 16 has been amended to read as follows:

16. A system for autostereoscopic vision comprising:

(a) a first optical construction operable to present superimposed left and right image picture elements of left and right images, respectively, said first optical construction being designed so as to polarize superimposed light of said left image differently from superimposed light of said right image and further so as to differently polarize light of said left image being displayed in adjacent picture elements and differently polarize light of said right image being displayed in adjacent picture elements; and

(b) a configurable second optical construction designed and constructed to be positioned between said first optical construction and a viewer and closer to said first optical construction than to said viewer,

(c) an eye-tracking sensor for providing information pertaining to positions of the left and the right eyes of the viewer; and

(d) - a control element operable to receive said eye-position information from said eye-tracking sensor, to calculate appropriate configurations of said second optical construction based on said

received eye-position information, and to issue successive configuration commands to said second optical construction, thereby commanding configurations of said second optical construction, which configurations enable a left eye of the viewer to continuously see left imagery data presented by said first optical construction and a right eye of the viewer to continuously see right imagery data presented by said first optical construction, and substantially prevent said left eye from seeing right imagery data and substantially prevent said right eye from seeing left imagery data, while the viewer changes position with respect to said first and second optical constructions.

The system disclosed by Rehorn is a static system. It does not comprise mechanisms for configuring or modifying its structure so as to accommodate changing positions of a viewer, nor does it comprise mechanisms for discovering and reporting changes in viewer position.

Consequently, the Applicant believes that amended claim 16 is clearly not anticipated by Rehorn, and hence is patentable over Rehorn as currently amended.

Claim Rejections – 35 USC § 102 – Morishima

Claims 32-33, 56, and 63 have been rejected under 35 U.S.C. 102(b), as being anticipated by Morishima et al., U.S. Patent No. 5,875,055. The Applicant respectfully submits that claims 32-33 as previously submitted were in fact distinct from the invention of Morishima, because Morishima does not in fact present a system wherein left and right picture elements are **superimposed**. Morishima's system is in fact based on rapid switching, between two alternatives, both switching of image pixels displayed on his display 1, and switching of the on/off status of his phase shift member 30. As may be clearly seen in his Figures 2, 4, 7, 8, 12, etc., each pixel of his display, *at any given time*, is displaying only either a left picture element or a right picture element, but not both. Left and right picture elements are nowhere superimposed. In Morishima's apparatus as described, each pixel displays either a

portion of a left image or a portion of a right image, but not both simultaneously. An *impression* of superposition is in a sense created for the viewer by the high frequency (above 60Hz) of the rapid alternation undergone by each pixel, between presenting a left image element and presenting a right image element, but at any given time each image is clearly showing either one, or the other, but never both. This fact is clearly spelled out in Morishima's disclosure in various places, for example starting in column 6, line 63: "The image processing means 3 extracts two parallax images R_s and L_s from the parallax image source 15, divides these images into stripe pixels, and synthesizes a single stripe image 11' by alternately arranging these stripe pixels in the order of, e.g., $R_1, L_2, R_3, L_4, R_5, L_6, \dots$. The image processing means 3 synthesizes another stripe image 11'' by alternately arranging the remaining stripe pixels in the order of $L_1, R_2, L_3, R_4, L_5, R_6, \dots$." Clearly, image pixels are not simultaneously superimposed. The process by which these pixels rapidly alternate is spelled out by Morishita in column 7 lines 14-55.

Consequently, the Applicant believes that claims 32 and 33 as previously formulated were not in fact anticipated by Morishita. However, to further emphasize the distinct nature of the present invention, claim 32 has been amended as follows:

- 32. A system for autostereoscopic vision comprising:
 - (a) a first optical construction which comprises:
 - (i) a display for displaying a uniformly polarized combined image of left and right image picture elements of left and right images, wherein light intensity of each picture element of said combined image is a function left-image light intensity at a corresponding position of a left image, and of right-image light intensity at a corresponding position of a right image; and
 - (ii) a birefringent layer having individually switchable elements being positioned in front of said display and serving for re-dividing said uniformly polarized combined image by controlled partial light rotation, thereby constructing an image having simultaneously superimposed left and right image picture elements of

left and right images, respectively, in which superimposed light of said left image is polarized differently from superimposed light of said right image, light of said left image displayed in adjacent picture elements is polarized differently and light of said right image displayed in adjacent picture elements is polarized differently.

Claim 33 has been amended so that it's paragraph numbering is in conformity with amended claim 32. Claim 56 has been slightly amended to emphasize that the plurality of polarizing strips of the second optical construction are configurable.

56. The system of claim 33, wherein said second optical construction is configurable to present a plurality of polarizing strips, each strip having a polarization orientation orthogonal to that of strips to which it is adjacent.

Claim 56 depends from claim 33, which depends from claim 32. Claim 63 depends directly from claim 32. It is the Applicant's belief that in light of the aforementioned arguments, amended claim 32 should be considered patentable over Morishita. Consequently, the Applicant believes that dependent claims 33, 56, and 63 are also patentable.

Claim Rejections – 35 USC § 102 – Faris and Omar

The Examiner has rejected claim 37 under 35 U.S.C. 102(b) as being anticipated by Faris, U.S. Patent No. 5,264,964 or by Omar et al., U.S. Patent No. 6,449,090B1.

Claim 37 has been amended so as to more clearly distinguish the claimed invention from the cited prior art. In particular, claim 37 now states unambiguously that each pixel of the combined image simultaneously presents both the left image and the right image. The applicant respectfully submits that this characteristic is distinct

from both Faris and Omar in the cited prior art. Consequently, the Applicant believes that claim 37 as amended is patentable over Faris and Omar.

Claim Rejections – 35 USC § 103

The Examiner has rejected claims 25-28 under 35 U.S.C. 103(a) as being unpatentable over Kleinberger et al., U.S. Patent No. 5,822,117. Claim 25 has been substantially amended, and now describes and autostereoscopic display system providing simultaneous full pixel resolution for both eyes of a viewer. Neither the structure nor the function of the invention as described by amended claim 25 is anticipated by Kleinberger in the cited prior art. Consequently, the Applicant believes that claim 25, and claims 26-28 dependent therefrom, are now patentable.

The Examiner has rejected claims 30-31 as being unpatentable over Kleinberger in view of Omar et al., U.S. Patent No. 6,449,090 B1. Claims 30-31 depend from amended claim 25, consequently the Applicant believes these claims to be patentable for the reasons stated above with respect to claims 25-28.

The Examiner has rejected claim 36 as being unpatentable over Morishima et al. in view of Omar et al. Claim 36 depends from claim 33 which depends from claim 32. Claim 32 has been substantially amended, as explained above. The Applicant believes claim 36 is consequently patentable over Morishima in view of Omar, in the light of the arguments presented above with respect to the Examiner's 35 USC § 102 objections.

The Examiner has rejected claims 57 and 58 as being unpatentable over Morishima et al. in view of Kleinberger et al. Claims 57 and 58 depend from claim 33, which depends from claim 32, which has been substantially amended. For the reasons presented above in the context of a discussion of the Examiner's


35 USC § 102 objections, the Applicant believes that claims 57 and 58 are now patentable.

The Examiner has rejected claims 37 and 59-62 as being unpatentable over Morishima et al. in view of Kleinberger et al as applied to claim 32 above, and further in view of Faris.

Claims 59-62 depend, directly or indirectly, from claim 37. Claim 37 has been substantially modified, and now specifies a display wherein each pixel is operable simultaneously to present a left image picture element in a first polarization orientation and a right image picture element in a second polarization orientation different from said first polarization orientation. The Applicant believes that claim 37 now specifies a system characteristic which appears neither in Morishima nor in Kleinberger nor in Faris, and that consequently claim 37, and claims dependent thereon, should be found patentable.

In view of the above amendments and remarks it is respectfully submitted that claims 1-68 are now in condition for allowance. Prompt Notice of Allowance is respectfully and earnestly solicited.

Respectfully submitted,



Sol Sheinbein
Registration No. 25,457

Date: September 14, 2004.

Encls.:

A three months extension fee.

An additional claims fee.

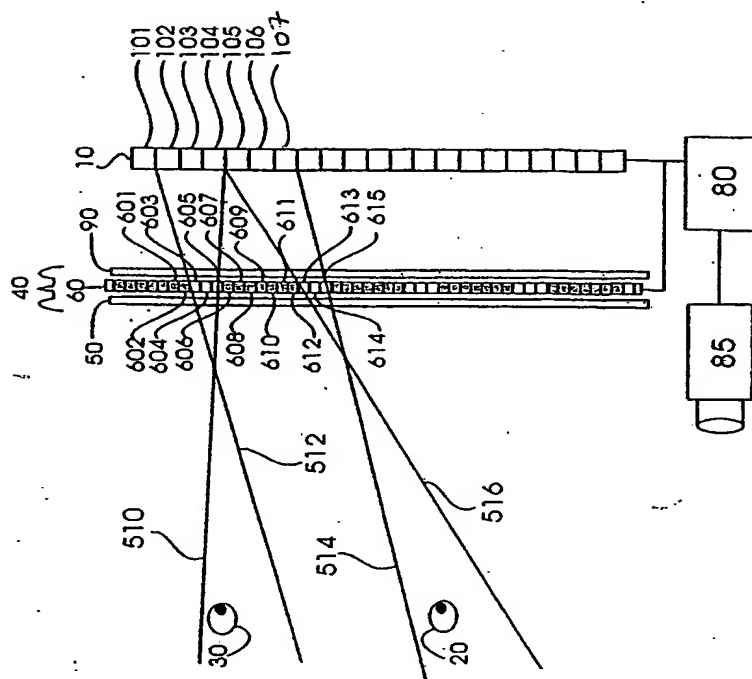
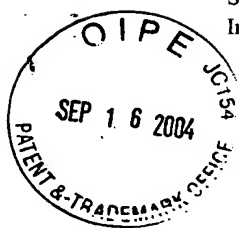


Figure 1b

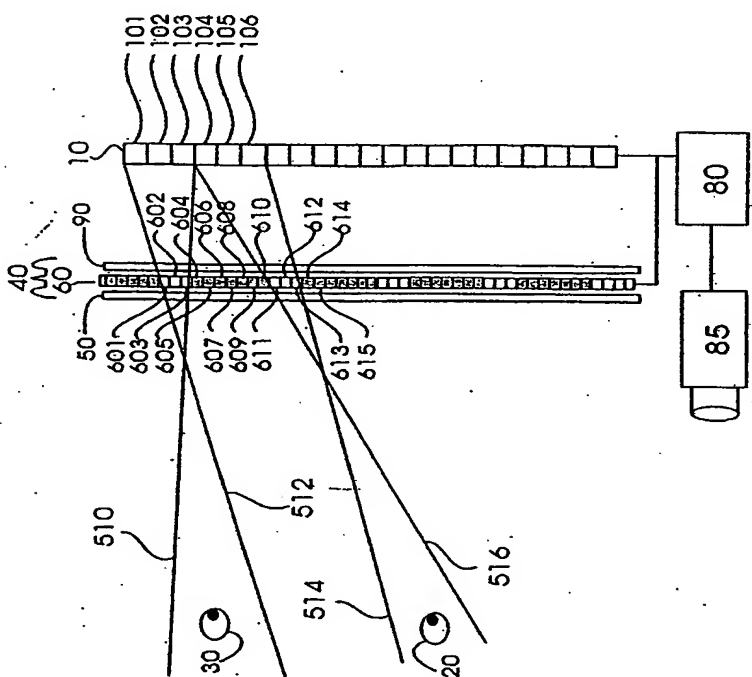


Figure 1a